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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/977,699 | 10/16/2001 | Thomas N. Indermaur | 10007795-1 | 3755 |

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06/10/2003

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
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EXAMINER

DIMYAN, MAGID Y

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/977,699

Applicant(s)

INDERMAUR, THOMAS N.

Examiner

Magid Y Dimyan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 01 May 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Acknowledgement

1. Receipt is acknowledged of the Amendment and Response to the Office Action, filed May 1, 2003. The Examiner accepts the amendments made to Figure 3a, in response to the Examiner's objections made in the First Office Action. It is also acknowledged that the Applicant has added one new independent claim (claim 18).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baisuck et al (U.S. Patent No 5,299,139) in view of McSherry et al (U.S. Patent No. 6,230,299). Baisuck et al (hereafter, Baisuck) disclose a short-circuit locator method that uses an improved circuit layout verifying system (see Abstract and column 2, lines 34 – 43 as well as other portions of the disclosure). However, Baisuck does not teach

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running a connectivity extract tool on the artwork (layout), or comparing the artwork (layout) of the circuit to the schematic (Layout versus Schematic – or LVS comparison). However, McSherry et al (hereafter McSherry) recite a method and apparatus for extracting and storing connectivity and geometrical data for an IC design that uses a connectivity extract tool (see Abstract) and running LVS for layout verification (see column 4, line 65 and column 5, line 17). Creating a copy of the “artwork” is inherent in such systems, since LVS programs create a log file with copies of all the files that are needed for verification. Since it would be advantageous to be able to check for short circuits in a complex Integrated circuit design expeditiously, it would therefore be obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Baisuck and McSherry to achieve the same invention as claimed.

4. Claims 2, 3, 4, 5, 6, 7, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baisuck in view of McSherry and further in view of Heile et al (U.S. Patent No. 6,321,369). As per claims 2, 5 and 6, the teachings of Baisuck and McSherry are cited above and in their disclosures. However they do not teach creating a copy of their artwork (layout) and inferring labels to that copy. Heile, et al (hereafter, Heile) on the other hand disclose an electronic design methodology that makes use of copying, deleting, renaming, adding, as well as other editing choices (see column 13, line 40) with their analysis tools. The analysis tool includes a layout editor (see column 8, line 35) so that changes (like adding/deleting labels) can be made. See also column 7, line

36 and column 8, lines 20 – 25 for a layout versus schematic check – claim 6. As per claim 3, see Baisuck (column 13, lines 3 – 4) that teaches the use of text files in the analysis of circuit shorts. As per claim 4, see Baisuck (column 4, lines 53 – 56) that recites locating erroneous connections in a circuit (i.e., each component). Referring to claims 6 – 9, Heile teaches how to create a base design output file and one or more variation output design files (see Abstract). The designer can then modify the variation output files, run the connectivity extract tool, LVS, etc on the copy. Since creating a copy of the layout, using additional labels on the copy, and the use of connectivity text files would facilitate the debugging process for locating shorts in an IC design (which includes electrical connections of all the components), it would therefore be obvious to one having ordinary skill in the art at the time the invention was made to combine all three disclosures to obtain the same inventions as claimed herein.

5. Claims 10, 11, 12, 13, 14, 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartels et al (U.S. Patent No. 6,275,974) in view of Heile. Referring to claims 10, 13 and 14, Bartels et al (hereafter, Bartels) recites a method for tracing (i.e., determining) a short in a VLSI circuit as a shortest path using the layout of the design, i.e. artwork (see Abstract and Background of the Invention). However, they do not teach creating a copy of the artwork, and inferring labels to the copy of the artwork. As recited above, Heile discloses these inventions. Claims 10 – 17 are therefore rejected for the same reasons given in paragraph 4 above for rejecting claims 2 – 9, respectively. Since creating a copy of the layout, using additional labels on the

copy, and the use of connectivity text files would facilitate the debugging process for locating the shortest path for a short in an IC design (which includes electrical connections of all the components), it would therefore be obvious to one having ordinary skill in the art at the time the invention was made to combine the two disclosures to obtain the same inventions as claimed.

Response to Amendment

6. Applicant's arguments filed May 1, 2003 have been fully considered but they are not persuasive.

7. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y Dimyan whose telephone number is (703) 308-1354. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

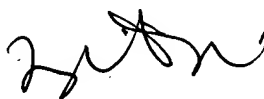
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Magid Y Dimyan
Examiner
Art Unit 2825

myd
June 2, 2003



LEIGH M. GARBOWICK
PATENT EXAMINER